

**REMARKS**

Claim 1 has been amended to correct a typographical error.

Review and reconsideration on the merits are requested.

Claims 1-10 were rejected under 35 U.S.C. § 102(e) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over U.S. Patent 6,610,775 to Oharu et al. The Examiner considered Oharu et al as disclosing an aqueous water-and oil-repellant dispersion substantially as claimed, including a compound of Formula 5 having the structure shown at col. 9, lines 50-52 said to overlap in scope with the claimed nonionic surfactant represented by formula (I) when R<sup>10</sup> represents an alkpolyenyl group having a carbon number of 8 or more. Particularly, the Examiner considered that R<sup>10</sup> would *inherently* have three or more side chains as required by R<sup>1</sup> of present claim 1.

Applicant traverses, and respectfully requests the Examiner to reconsider in view of the test data presented in the specification and the following remarks.

The alkyl group, the alkenyl group or the alkpolyenyl group in the surfactant (b<sup>1</sup>) of Oharu et al. preferably has a carbon number of from 4 to 26 and may be of a linear or branched structure (col. 9, lines 22-26). This corresponds to R<sup>10</sup> of formula F5 of Oharu et al.

The "alkyl" group is a saturated hydrocarbon. The "alkenyl" group is a hydrocarbon group having an unsaturated bond. The "alkpolyenyl" group is a hydrocarbon having a plurality of unsaturated bonds. In this regard, Applicant submits herewith attached database material (four (4) pages) showing various compounds having an "alkpolyenyl" group.

The number of unsaturated bonds in an alkpolyenyl group has nothing to do with the number of side chains, and therefore there is no basis for the Examiner's assertion that an "alkpolyenyl group" would *inherently* have three or more side chains. That is, the mere expression "alkpolyenyl group" does not describe a branched alkenyl group of formula (I) of present claim 1 having three or more side chains having a total of at least three carbon atoms in all side chains.

Moreover, there is nothing in the cited prior art which suggests the desirability, and hence the unobviousness, of employing a surfactant (B) of present claim 1 having the specifically claimed structure.

For the above reasons alone, it is respectfully submitted that the present claims are neither anticipated nor obvious over Oharu et al.

Further in support of patentability of the present claims, Applicant discusses criticality in R<sup>1</sup> of the surfactant of formula (I) of claim 1 having three or more side chains for achieving the effects of the invention, as follows.

The nonionic surfactant (POPPOE-ITDE) used in Example 1 is a mixture of three compounds, that is (1) a compound having four carbon atoms in side chains (see claim 6); (2) a compound having six carbon atoms (six methyl groups) in side chains (see claim 7); and (3) a compound having six carbon atoms (three methyl groups) in side chains (see claim 8).<sup>1</sup>

In contrast, the Comparative Examples employed the following nonionic surfactants.

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<sup>1</sup> The POE-SMO (polyoxyethylene sorbitan monooleate) used in Example 4 is outside the scope of the nonionic surfactant as defined in present claim 1.

	Nonionic Surfactant	Carbon number of side chains in nonionic surfactant
Comparative Example 1	Polyoxyethylene lauryl ether (POE-LE)	0
Comparative Example 2	Cationic surfactant is not used	
Comparative Example 3	Polyoxyethylene sorbitan monooleate	Cyclic (not branched)
Comparative Example 4	Polyoxypropylene polyoxyethylene cetyl ether (POPPOE-CE)	0

The subject dispersions were evaluated with respect to water- and oil-repellency, mechanical property, chemical property and storage stability, the results of which are set forth in Table B at page 17 of the Specification. As shown therein, the aqueous water- and oil-repellent dispersion of the invention including a surfactant (B) comprising a cationic surfactant and a nonionic surfactant of formula (I) where  $R^1$  has three or more side chains provides remarkably enhanced mechanical property while retaining a high level of water- and oil-repellency as compared to the above-noted Comparative Examples employing a nonionic surfactant having no side chains.

Withdrawal of all rejections and allowance of claims 1-10 is earnestly solicited.

In the event that the Examiner believes that it may be helpful to advance the prosecution of this application, the Examiner is invited to contact the undersigned at the local Washington, D.C. telephone number indicated below.

AMENDMENT UNDER 37 C.F.R. § 1.116  
U.S. Application No. 10/502,014

Q82625

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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